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ABSTRACT

A communications signal which carries a purely digital wrapper signal and a method and system for generating it and extracting overhead information therefrom. The signal can be received by a high-performance format-specific receiver at the end of the network as part φf the overall payload, but can also be detected by a low-bandwidth payloadbit-rate-insensitive receiver at an intermediate node. is achieved by using alternating payload and wrapper segments and providing special digital coding on the wrapper segments. Specifically, each wrapper segment consists of a contiquity of signal level sequences, each of which is a multi-bit symbol that encodes a bit in the overhead bit stream. of the symbols is thus a signal level sequence having one of two possible transition patterns, with the appropriate symbol being chosen depending on whether the overhead bit is a logic "zero" or a logic "one". The two symbol patterns which represent logic "zero" and logic "one" each contain enough transitions to meet synchronization and automatic control requirements associated with various equipment, while containing a sufficiently distinct average signal level (or pulse density) to allow a receiver to associate the resultant short-term D.C. offset with correct wrapper symbol.